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THE FEATURES OF STRUCTURE OILS OF KHOREYVER DEPRESSION

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The Khoreyver Depression is located in the northern part of Pechora Basin (Russia) where is detected more than 50 fields of oil in a broad stratum interval: D_1, D_3f_2, D_3fm, C_3, C_2+C_3, C_3-P_1, P_1a+s, P_2. The oils in Silurian deposits are concentrated basically in a southeast of a cavity. In Devonian stratas the reservoir have widespread occurrence and are connected with reefs and structural traps. In the Carboniferous-Permian deposits reservoirs of oil are connected with reefs and anticline traps in the southeast of a cavity. The physicochemical properties of oils are diverse.

The physicochemical characteristic of oils allows to select four types. I type: very heavy and heavy (d> 0.71 and > 0.900 g/sm^3), high-resins (∑resins and asphaltenes from 15 up to 35%); sulfurous and high-sulphur (1.5-2.3%), paraffins < 4%, with the small contents of gasolines (< 20%) and gases (< 50 nm^3/t). II type: mean oils (d 0.870-0.851 g/sm^3), ∑resins + asphaltenes 10-15%, sulfurous, is rare high-sulphur, paraffinaceous (3.5-4.5%). III types: the oils with density 0.850-0.821 g/sm^3, resins - 8-10%, paraffins - 3-4% and > 6%, sulfur 0.5-1.7%. IV type: light oils (d≈0.820 g/sm^3), ∑resins + asphaltenes < 8%), with low concentration of sulfur (< 0.5 %), paraffinaceous and high-paraffinaceous (2.2-7%), with under for high-gravity oils contents of gasolines (16-24%).

Very heavy and the heavy oils are advanced in the Permian and Carboniferous depositions, the mean oils are dated basically for Devonian stratas, mild and light oils basically to Silurian manifolds. However take place disturbance of the marked tendency. So, in Silurian stratas on Middle Makariha area the reservoir of heavy crudes, and in the Permian and Carboniferous deposits - reservoir of high-gravity oils is detected.

The oils have difference level of maturity. Most «mature» oils are allocated in Silurian and Devonian deposits on north-east (reservoir D_1 of fields Trebsa and Titova). Here high-gravity oils, low-resins, low-sulphur, high-paraffinaceous (10-14%) are characterized by very low values i-alkanes (Pr/C_{17} < 0.2%), small contents of high molecular weight n-alkanes (C_{25}-C_{34} = 10-13 %), heightened value of steranes and triterpanes (C_{29} (20S/20S + 20R) = 0.53, Tm/Ts = 0.6-0.7). Thus the prevalence of odd carbon numbers in area n-C_{15}-C_{19}. The similar distribution of hydrocarbon components was established earlier (Anishenko et al., 1991) in zones of completion of a phase oil-generation (R_0 - 1-1.3 %).

Mild, low-resins, low-sulphur, high-paraffinaceous, high mature oils (Tm/Ts = 0.5, CPI - 1.05; C_{29}(20S/20S+20R)= 0.53-0.55) of Silurian genotype are met on Upper Vozei area (C_{27}ááá - 28-33%, C_{28}ááá = 24-28%, C_{29}ááá = 38-47%). In the limits of a southeast part of Khoreyver Depression in Lower Silurian deposits the autochthonous oils of smaller maturity, mean on density, sulfurous and low- paraffinaceous are met. The greatest prevalence in limits of Khoreyver Depression was received oils of Frasnian deposits - domanic genotype and genotype of terrigene sargaev deposits. For domanic genotype (Valyaeva, 1998): Pr/C_{17} = 0.6-0.8 and C_{27}ααα = 30-34%, C_{28} ααα = 14-16%, C_{29} ααα = 53-56%). For a genotype of Frasnian terrigene stratas C_{27} ααα = 24-30%, C_{28} ααα = 22-26%, C_{29} ααα = 44-53%). These oils, basically, heavy, tarry and high-resins, sulfurous, with low factors of maturity on sterane C_{29} (0.32-0.40). In reservoirs of reef constructions oil often high-sulphur, with the under contents of associated gas and gasolines. The biodegradation of oils in reefs reservoirs happens for the score sulfar-reducing bacterias. As a rule, in these conditions there are mercaptans and hydrogen sulphite. The oils of Frasnian genotype meet in overlying stratas - C_3-P_1, P_2. In Devonian stratas except autochthonous oils the mixed genotypes is met.

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